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सिरारहित ढुलाई रोप क्लिप — विशिष्टि

भाग 3 लेशिंग चेन

Indian Standard

ENDLESS HAULAGE ROPE CLIPS — SPECIFICATION

PART 3 LASHING CHAIN

ICS 73.100.40

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

August 2005

Price Group 3

Mining Techniques and Equipment Sectional Committee, ME 08

FOREWORD

This Indian Standard (Part 3) was adopted by the Bureau of Indian Standards, after the draft finalized by the Mining Techniques and Equipment Sectional Committee had been approved by the Mechanical Engineering Division Council.

Haulage clips are used for connecting a set of mine tubs to the haulage rope in a mine haulage system. Different types of clips are used with over-rope under-rope endless haulage system.

Part 1 of this standard was published in 1979. While revising Part 1 of this standard, it was felt necessary to issue standards covering the dimensional details of components of various types of haulage clips.

Accordingly this standard has been published in three parts in this revision. Other parts in the series are:

Part 1 General requirements
Part 2 Screw clip, cam clip, small man clip and wedge clip

The composition of the Committee responsible for the formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard
ENDLESS HAULAGE ROPE CLIPS — SPECIFICATION
PART 3 LASHING CHAIN

1 SCOPE

This standard (Part 3) specifies the requirement of lashing chains used to attach tubs or set of tubs with the haulage rope in endless haulage system.

2 REFERENCES

The following standards contain provisions, which through reference in this text constitute provision of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

IS No.	*Title*
1875 : 1992	Carbon steel billets, blooms, slabs and bars for forgings (*fifth revision*)
2759 : 1969	Higher tensile steel point hooks for use with wire thimbles
3948 : 1986	Specification for calibrated high tensile steel (round link) chain (electric butt welded) for chain conveyors and coal ploughs used in mines (*first revision*)
5517 : 1993	Steels for hardening and tempering — Specification (*second revision*)
9170 (Part 1) : 2003	Endless haulage rope clips — Specification: Part 1 General requirements (*first revision*)

3 TYPES

Lashing chain shall be classified as Type 1 and Type 2.

4 NOMENCLATURE, DIMENSIONS AND MATERIALS

Nomenclature, dimensions and materials of lashing chain shall be as given on page 2.

5 GENERAL REQUIREMENTS

5.1 Lashing chain with its fitting shall have static factor of safety of not less than 7 in relation to maximum static load attached to the rope.

5.2 Safe working load/maximum draw bar pull of lashing chain shall not exceed 1.5.

5.3 Two lashing chains shall be used at a time. One shall be fitted between the rope and the leading tub and the other at the rearmost tub and the rope.

6 MANUFACTURE AND WORKMANSHIP

6.1 Manufacturer shall be reliable having at his works adequate facilities for proper forging, machining, heat treatment and testing facilities for the product. Forge welding steel is not desirable. Electrical welding shall be done where necessary and whereever welding is done, slag shall be carefully cleaned at each stage. Holes, if any, shall be drilled instead of being punched. Jointing shall be done by electric welding and shall not by smith welding.

6.2 Chain shall be of bull welded quality conforming to Grade B of IS 3948.

6.3 Hook shall be of die-forged quality and the assembly shall give evidence of good workmanship and finish. The material of the hook shall conform to Class 3 of IS 1875. Hook shall conform to IS 2759 for other requirements.

6.4 The egg shaped links and the end links known as oral links shall be made from 20 C15 steel conforming to IS 5517.

6.5 All parts of chain and hook shall be given proper heat treatment after the forging and welding operation to relieve the stresses and to achieve proper working hardness.

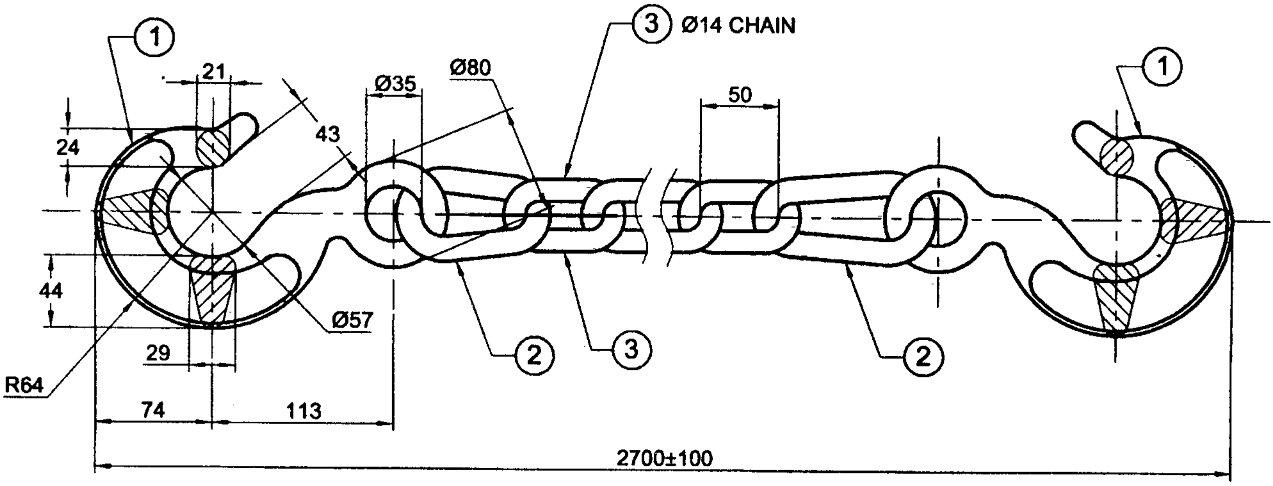
7 TESTS

7.1 For tests, IS 9170 (Part 1) shall apply.

7.2 Two of the lashing chain assemblies shall be subjected to break load to ascertain factor of safety of minimum 7.

8 MARKING

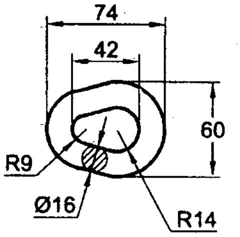
8.1 For marking, IS 9170 (Part 1) shall apply.



TYPE 1

All dimensions in millimetres.

Component No.	*Component Name*	*Quantity*	*Material Specification*
1	Hook-drop forged	2	Class 3 of IS 1875
2	Oval link	2	20 C15 of IS 5517
3	14 mm chain, pitch 50 mm	1set	Grade B of IS 3948



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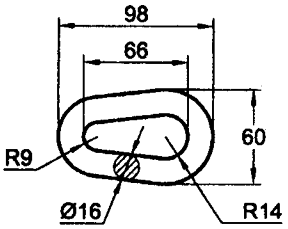

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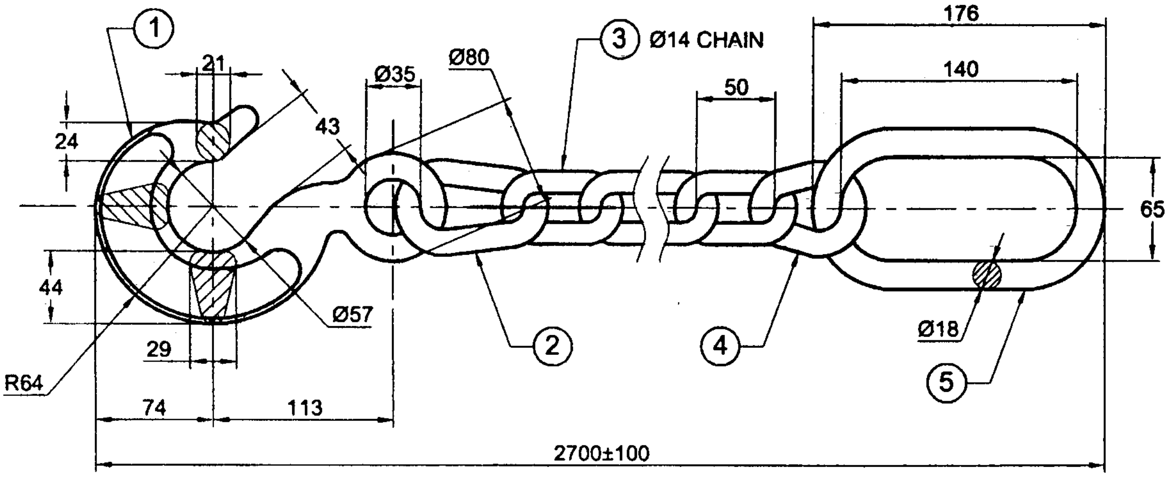

TYPE 2

All dimensions in millimetres.

Component No.	*Component Name*	*Quantity*	*Material Specification*
1	Hook-drop forged	4	Class 3 of IS 1875
2	Oval link	1	20 C15 of IS 5517
3	14 mm chain, pitch 50 mm	1set	Grade B of IS 3948
4	Oval link (end link)	1	20 C15 of IS 5517
5	End link	1	20 C15 of IS 5517

8.2 BIS Certification Marking

8.2.1 Each lashing chain may also be marked with Standard Mark.

8.2.2 The use of Standard Mark is governed by the provisions of *Bureau of Indian Standards Act,* 1986 and the Rules and Regulations made thereunder. The details of conditions under which a licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

9 CERTIFICATE OF TEST

The supplier shall provide certificate of test and examination in the form shown in Annex A with every consignment of lashing chains.

ANNEX A

(*Clause* 9)

PROFORMA FOR THE CERTIFICATE OF TEST AND EXAMINATION OF CLIP

Identification Mark	Description	Quantity Tested	Proof Load	N.D.T.	Break Load

Particulars of heat treatment to which the lashing chain has been subjected:

....

We hereby certify that the lashing chain described above complies in all respects with IS 9170 (Part 3) and it was subjected to the appropriate slip load test and subsequently examined by a competent person.

Signature..

Date ....

ANNEX B
(Foreword)

COMMITTEE COMPOSITION

Mining Techniques and Equipment Sectional Committee, ME 08

Organization	*Representative(s)*
Directorate General of Mines Safety, Dhanbad	Shri Y. K. Sharma (***Chairman***) Shri Anup Viswas (*Alternate*)
Bharat Coking Coal Ltd, Dhanbad	Shri Ramji Sahay
Bharat Earth Movers Ltd, Bangalore	Shri V. Palaniswamy Shri T. R. Loganathan (*Alternate*)
Central Coalfields Ltd, Ranchi	Chief General Manager (Operations) Chief General Manager (Equipments) (*Alternate*)
Central Mine Planning & Design Institute Ltd, Ranchi	Shri S. K. Chatterji Shri Kishore Kumar (*Alternate*)
Central Mining Research Institute, Dhanbad	Shri V. N. Pathak
Eimco Elecon (India) Ltd, Vallabh Vidyanagar	Shri A. M. Deshpande Shri Ravindra Luthra (*Alternate*)
Gujarat Mineral Development Corporation, Ahmedabad	Shri S. N. Mathur
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Hindustan Zinc Ltd, Udaipur	Shri K. C. Jain
Indian Bureau of Mines, Goa	Shri Ranjan Sahai
Kapur Mining Equipment Pvt Ltd, Asansol	Shri Dipak Kapur Shri Tapan Dutta (*Alternate*)
Mahanadi Coalfields Limited, Dist Sambalpur	Shri R. B. Upadhyay Shri B. P. Pattnaik (*Alternate*)
Manganese Ore (India) Ltd, Nagpur	Shri P. M. Reddy Shri G. Wangneo (*Alternate*)
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South Eastern Coalfields Ltd, Bilaspur	Shri A. Shukla
The Eastern Coalfields Ltd, Sanctoria	Shri S. C. Basu Shri D. K. Roy (*Alternate*)
The Hutti Gold Mines, Hutti, Karnataka	Dr M. L. Patil
The Indian Chain Link Manufacturers Company, Mumbai	Shri P. K. Nevatia

Organization	*Representative(s)*
The Singareni Collieries Co Ltd, Dist Khammam, A.P.	SHRI K. RAGHAVENDRA RAO SHRI E. RAJA RAO (*Alternate*)
The Tata Iron and Steel Co Ltd, Dist Dhanbad	SHRI R. S. SINGH SHRI V. K. SRIVASTAVA (*Alternate*)
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BIS Directorate General	SHRI A. S. BASU, SCIENTIST 'F' & Head (MED) [Representing Director General (*Ex-officio Member*)]

Member Secretary
SHRI P. VENKATESWARA RAO
Scientist 'E' (Director) (MED), BIS

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